

ENGLISH TRANSLATION OF THE INTERNATIONAL APPLICATION
FOR NATIONAL PHASE SUBMISSION

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Claims

1. Piezo actuator (1) for a fuel injection valve which is inserted under pre-stressing into an actuator housing, with a compensation element to compensate for the different thermally-induced changes in length in relation to the actuator housing being incorporated between the piezo actuator (1) and a top plate (5) of the actuator housing.
characterized in that
 - the piezo actuator (1) is arranged within a tubular spring (3),
 - the compensating element is embodied as a compensating cylinder (2) arranged within an extension tube (6),
 - the actuator housing comprises a sleeve (3, 6) consisting of the tubular spring (3) and the extension tube (6) fixed to it, the extension tube end of which is permanently connected to the top plate (5) and the tubular spring end of which, in exerting a defined pre-stressing on the parts (1, 7, 2) arranged axially behind each other within the sleeve (3, 6), is permanently connected to a base plate (4) of the actuator housing (4, 3, 6, 5).
2. Piezo actuator in accordance with claim 1,
characterized in that the parts of the actuator housing (4, 3, 6, 5) are made of steel.
3. Piezo actuator in accordance with claim 1 or 2,
characterized in that the parts of the actuator housing (4, 3, 6, 5) are welded to each other at their connecting points.
4. Piezo actuator in accordance with one of the claims 1 to 3,

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characterized in that the compensating cylinder (2) consists of aluminum.

5. Piezo actuator in accordance with one of the claims 1 to 4, characterized in that a spacer (7) is arranged between piezo actuator (1) and compensating cylinder (2).

6. Piezo actuator in accordance with one of the claims 1 to 5, characterized in that breakthroughs are made in the circumference of the extension tube (6) in which a spring plate (8) is mounted in each case so that, with an actuator unit fitted, a heat transfer is produced from the compensating cylinder (2) to a housing (16) of the injection valve.

7. Piezo actuator in accordance with claim 6, characterized in that the spring plates (8) are made of the material copper, copper-beryllium or bronze in each case.

8. Piezo actuator in accordance with one of the claims 1 to 7, characterized in that a groove (1) for caulking the actuator unit in the valve housing is incorporated into the top plate (5) of the actuator housing (4, 3, 6, 5).

9. Injection valve with a piezo actuator (1) according to one of the claims 1 to 8.